



विद्या सर्वार्थ साधिका

ANANDALAYA
ANNUAL EXAMINATION
Class: VIII

Subject: Science
Date : 13-03-2025

MM : 80
Time: 3 hours

General Instructions:

1. This question paper consists of 39 questions in 5 sections.
2. All questions are compulsory. However, an internal choice is provided in some questions. A student is expected to attempt only one of these questions.
3. Section A consists of 20 objective type questions carrying 1 mark each.
4. Section B consists of 6 Very Short questions carrying 02 marks each. Answers to these questions should be in the range of 30 to 50 words.
5. Section C consists of 7 Short Answer type questions carrying 03 marks each. Answers to these questions should be in the range of 50 to 80 words.
6. Section D consists of 3 Long Answer type questions carrying 05 marks each. Answer to these questions should be in the range of 80 to 120 words.
7. Section E consists of 3 source-based/case-based units of assessment of 04 marks each with sub-parts.

SECTION A

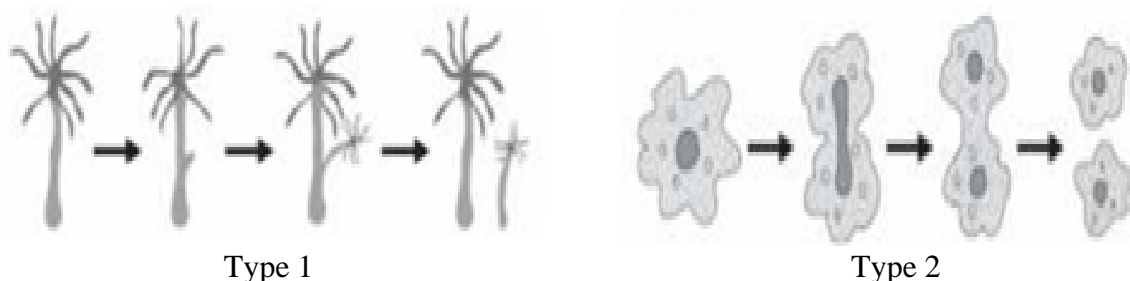
1. Electricity is produced using many natural resources. Which inexhaustible resource should be used to produce electricity? (1)
(A) Coal (B) Natural gas (C) Petroleum (D) Water
2. A by-product obtained after processing coal is useful in manufacturing plastics, synthetic dyes, naphthalene balls etc. The name of the by-product is _____. (1)
(A) coal gas (B) coal tar (C) coke (D) paraffin wax
3. A student tries to burn a piece of wood with a matchstick. He notices that every time he brings the matchstick closer to coal, the coal turns red, but it does not catch fire, because _____. (1)
(A) matchstick and coal are both made of wood and do not burn in normal conditions.
(B) matchstick is made in a way to burn only smaller things like paper and plastic sheets.
(C) matchstick cannot heat the coal to a very high temperature where it starts burning.
(D) matchstick being smaller burns quickly and could not provide enough heat for coal to start burning.
4. A student burns three substances P, Q, and R and records the observation in a table: (1)

Substance	Observation
P	Burns quickly producing heat and light
Q	Burns at room temperature on its own
R	Burns with evolution of heat, light and sound

Which option correctly categorises the given substances?

- (A) All the substances are undergoing rapid combustion.
- (B) Substances P and Q are undergoing spontaneous combustion whereas substance R is undergoing rapid combustion.
- (C) Substance P is undergoing rapid combustion; substance Q is undergoing spontaneous combustion whereas substance R is undergoing explosion combustion.
- (D) Substance R is undergoing rapid combustion; substance Q is undergoing spontaneous combustion whereas substance P is undergoing explosion combustion.

5. A student learns that salts like potassium chloride and sodium chloride are introduced in a weakly conducting solution. What option explains the chemical reactions that salts undergo and affect the conductivity of the solution? (1)
- (A) Salts react chemically with the water particles and decrease the conductivity of the solution.
 (B) Salts help to make the solution non-conducting by reacting with the particles of the solution.
 (C) Salts mix with the particles of the weak conducting solution and helps to produce oxygen from the solution.
 (D) Salts undergoes a chemical reaction with the particles of the solution and increase its conductivity.
6. A student made a list of the applications of electroplating on metals. He learns that zinc metal is electroplated over iron. Why is the electroplating of iron done? (1)
- (A) To change the surface properties of the iron.
 (B) To make it resistant to atmospheric moisture.
 (C) To improve the appearance of iron and make it shiny.
 (D) To alter the chemical properties of the iron and make it stronger.
7. Which of the following statements is correct for the given diagrams? (1)

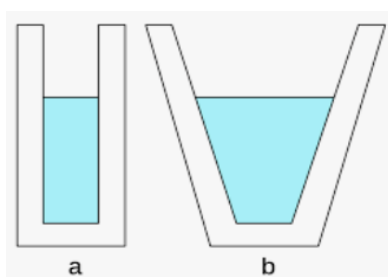
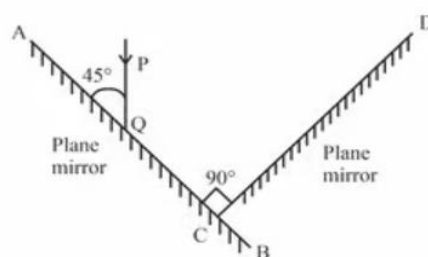


- (A) Type 1 mode of reproduction is called binary fission.
 (B) Type 2 mode of reproduction produces two non-identical offspring.
 (C) Type 1 mode of reproduction involves unequal distribution of nuclear content.
 (D) Type 1 and 2 modes of reproduction involve a single parent.
8. The Indian government declared many protected forest areas as tiger reserves because the Tiger is _____. (1)
- (A) a mammal (B) our national animal
 (C) Tiger is an endangered species. (D) The Tiger is the top predator of forest ecosystems.
9. What is the role of refrigeration in food preservation? (1)
- (A) It increases the temperature to kill microorganisms.
 (B) It slows down the growth of microorganisms by maintaining low temperatures.
 (C) It changes the food's texture.
 (D) It enhances the flavour of food.
10. Migratory birds fly to faraway places during a specific season of the year. Which of the following conditions are responsible for migration? (1)
- (i) Shortage of food (ii) Extreme weather conditions
 (iii) Availability of breeding grounds (iv) Competition for space
 (A) (ii) and (iii) (B) (i) and (iii) (C) (i) and (ii) (D) (iii) and (iv)
11. The process of sex determination in humans follows a genetic mechanism. Which of the following statements is true regarding this process? (1)
- (A) The male always contributes the X chromosome to the offspring.
 (B) The female always contributes the Y chromosome to the offspring.
 (C) The male determines the sex of the offspring by contributing either an X or Y chromosome.
 (D) The sex of the offspring is randomly decided.

12. In the diagram of the human female reproductive system the part labelled '2', has a significant role during the menstrual cycle. Select the correct option that describes its function. (1)



- (A) It produces eggs during ovulation.
 (B) It transports the egg from the ovary to the fallopian tube.
 (C) Its wall thickens or sheds off during menstrual cycle.
 (D) It is the site of fertilisation.
13. Two plane mirrors AB and CD are placed at right angles to one another. A ray of light PQ strikes AB at Q, making an angle of 45° as shown in the diagram. This ray will be reflected from the mirror CD at an angle _____. (1)
- (A) 25° (B) 30° (C) 45° (D) 90°
14. The process of transferring charges from a charged body to the ground is called _____. (1)
 (A) rubbing (B) conduction (C) induction (D) earthing
15. The nature of electrostatic force is _____. (1)
 (A) attractive only (B) repulsive only
 (C) both attractive as well as repulsive (D) neither attractive nor repulsive
16. The pressure of the water at the bottom of the two vessels (a) and (b) of different sizes, when filled to the same height will be _____. (1)



- (A) more for the vessel (a) (B) more for the vessel (b)
 (C) same for the vessels (a) and (b) (D) None of the above
- For question numbers 17 to 20, two statements are given-one labelled Assertion and the other labelled Reason. Select the correct answer to these questions from the codes (A), (B), (C) and (D) as given below.
- (A) Both Assertion and Reason are true and Reason is the correct explanation of Assertion
 (B) Both Assertion and Reason are true but Reason is NOT the correct explanation of Assertion.
 (C) Assertion is true but Reason is false
 (D) Assertion is false and Reason is also false.
17. A: Earthquakes cannot be accurately predicted. (1)
 R: The movement of tectonic plates is unpredictable.

18. A: White phosphorus is kept under water. (1)
R: Ignition temperature is the minimum temperature at which substance catches fire.
19. A: HIV stands for Human Immunodeficiency Virus. (1)
R: HIV weakens the immune system, making the body difficult to fight against infections.
20. A: A sudden increase in height in boys and girls during puberty. (1)
R: During puberty, endocrine glands produce hormones that increase height among adolescents.

SECTION B

21. (a) How do our eyes view a moving object? (2)
(b) What is the comfortable near distance at which one can read with a normal eye?
22. What is atmospheric pressure? Explain why we are not crushed by atmospheric pressure. (2)
OR
What do you mean by contact forces? Give two examples of it.
23. Why is magnetic compass needed to test the conduction of electric current? (2)
24. How does natural gas benefit industries and households (2)
25. Give reasons for the following statements: (2)
(a) Fresh milk is always boiled before consumption.
(b) Plants and animals obtain nitrogen in different forms from other organisms.
26. Why are wildlife sanctuaries important for the conservation of plants and animals? (2)

SECTION C

27. How can we reduce the dependence on fossil fuels? Explain (3)
28. What are the characteristics of a good fuel? Why is there no “perfect” fuel? (3)
OR
Describe the structure of a candle flame and explain the characteristics of each zone.
29. (a) Define thrust and give its SI unit. (3)
(b) A block of wood is kept on a tabletop. The weight of the wooden block is 5 kg.wt and its dimensions are 40 cm × 20 cm × 10 cm. Find the pressure exerted by the wooden block on the table top if it is made to lie on the table top with its sides of dimensions 20 cm × 10 cm. Take 1 kg.wt = 10N.
30. (a) Explain why a charged refill is repelled by another charged refill, whereas an uncharged refill is attracted by another charged refill. (3)
(b) Describe with the help of a diagram, an instrument which can be used to detect a charged body.
31. (a) What is noise pollution? (3)
(b) How does noise pollution affect human health?
(c) Explain the measures to limit noise pollution.
32. Based on the following situations, identify the diseases that could spread and suggest preventive measures for each of the diseases. (3)
(a) Mohan was exposed to an uncovered cough, leading to a persistent cough and fever.
(b) Ramu drank pond water and developed prolonged fever and stomach pain.
(c) Soham lives in a crowded area without mosquito protection and experiences a high fever with chills.

33. (a) What is deforestation? (3)
(b) Explain how deforestation leads to global warming.

SECTION D

34. Explain the process of electroplating and its applications in daily life. (5)

OR

- (a) Why do certain liquids conduct electricity better than others? Give examples.
(b) Discuss the chemical effects of electric current and the observations you might make in solution.
35. (a) Draw a labelled diagram of the human eye. (5)
(b) Write down the functions of (i) Iris, (ii) retina and (iii) eye lens of the eye.
(c) Which part of the eye gets affected if someone is suffering from cataract? How is it treated?

OR

- (a) Differentiate between regular and diffused reflection.
(b) Does diffused reflection mean the failure of the laws of reflection? Justify your answer.
(c) Sachin, whose height is 150 cm, wants to observe the characteristics of his image formed by a plane mirror. In the beginning, he stands 3m away from the mirror and then he moves 2m towards the mirror. Write any four characteristics of his image observed by Sachin.
36. (a) Why is reproduction essential for organisms? (5)
(b) What is meant by in vitro fertilisation?
(c) Mention any two reasons for adopting the IVF technique.
(d) The term 'Test tube baby' is a misnomer. Why?

OR

- (a) Explain the process of fertilisation in humans.
(b) Mention the different stages of human embryonic development.
(c) What is the function of the placenta in the development of the human embryo?

SECTION E

Questions 37 to 39 are Source-based/Case study-based questions of 4 marks with sub-parts.

37. Sound needs a medium like solid, liquid or gas to travel. In humans, sound is produced by the voice box called larynx. Sound is produced when the air from the lungs is exhaled out and vibrates the vocal cords. These vibrations in the vocal cords create the sound. The pitch of the voice depends on the length of the vocal cords. Humans can hear the sound in the range 20 Hz to 20kHz. The loudness of the sound depends on the amplitude of vibrations while shrillness or pitch of sound depends on the frequency of sound waves.
- (i) Sound energy travels the fastest in _____. (1)
(A) solids (B) liquids (C) gases (D) vacuum
- (ii) Loudness is measured in _____. (1)
(A) newton (B) joule (C) pascal (D) decibel
- (iii) The frequency of a given sound is 1.5 kHz. The vibrating body is _____. (1)
(A) completing 1.5 vibrations in one second.
(B) taking 1.5 seconds to complete one vibration.
(C) taking 1500 seconds to complete one vibration.
(D) completing 1500 vibrations in one second.
- (iv) What is the effect on the pitch of a sound when the frequency of the vibrating body gets doubled? (1)

OR

- (iv) Differentiate between audible and inaudible sounds.

38. Fuel efficiency: The amount of heat energy produced on completely burning one Kilogram of fuel (in oxygen) is called the calorific value of a fuel. The more the calorific value of a fuel, the more is the efficiency of the fuel. The calorific value of the fuels is expressed in Kilojoules per kilogram (kJ/kg) or kilojoules per gram (kJ/g).
- (i) If 2 kg of LPG is burned completely, how much heat energy is produced? Calorific value of LPG = 55,000 kJ/kg (1)
 - (ii) In an experiment 4.5 kg of a fuel was completely burnt. The heat produced was measured to be 180,000 kJ. Calculate the calorific value of the fuel. (1)
 - (iii) What will be the calorific value of a fuel whose 1.5 kg of mass produces 67,500 kJ on complete burning. (2)

OR

- (iii) Total amount of heat produced by a fuel having a calorific value of 20 kJ/kg was found to be 50 kJ. How much fuel was burnt
39. The pituitary gland is a tiny pea-sized gland present in the brain region. The pituitary gland is called the master gland as it controls the other endocrine glands. It produces regulating hormones that stimulate other endocrine glands like the thyroid, pancreas, adrenal and gonads to secrete their hormones. It secretes hormones that act on testes and ovaries and stimulates them to produce sex hormones. Testes produce testosterone and ovaries produce estrogen. These hormones stimulate the secondary sexual changes at puberty.
- (i) What is the function of the adrenal glands in the human body? (1)
 - (ii) Why are the endocrine glands called the "ductless glands"? (1)
 - (iii) Which gland is both exocrine and endocrine? Name its secretions. (2)
- OR**
- (iii) Explain the role of hormones in the metamorphosis of frogs.